We claim:

1. A method of correlating changes in the chemical and physical properties of non-electrolytic or weakly electrolytic fluids comprising monitoring the electrical response of said fluid over a period of time to an electrical potential applied to the fluid using a solid state device positioned within said fluid comprising a set of electrodes consisting of at least an anode, a cathode and a reference electrode, said set of electrodes being encapsulated in a solid electrolyte film, an exterior surface of the film being in contact with said fluid.

2. The method of claim 1 wherein the electrical potential is applied through the anode and is cycled from about -1.4 volts to about 1.4 volts and the current flowing through the fluid in response thereto is monitored at the cathode.

3. A device for monitoring the existence of electrolytic species existing in or generated during the use of a non-electrolytic of weakly electrolytic fluids, the device comprising a set of electrodes consisting of at least an anode, a cathode and a reference electrode encapsulated in a solid electrolyte film, an exterior surface of the film being in contact with said fluid.

4. The device of claim 2 wherein the solid electrolyte film comprises a perfluorosulfonate ionomer film.